

**CLAIMS**

1. A process for direct conversion, by catalytic cracking, of a light olefinic hydrocarbon feed comprising at least 80% by weight of hydrocarbons containing at most 12 carbon atoms for the production of propylene, said process comprising direct cracking of the feed on a supported catalyst comprising at least one zeolite comprising silicon and aluminium and having form selectivity, from the group constituted by zeolites with one of the following structure types: MEL, MFI, NES, EUO, FER, CHA, MFS, MWW, and from the following zeolites: NU-85, NU-86, NU-88 and IM-5, comprising circulating the feed at a temperature in the range about 480°C to 620°C in at least one reactor on a granular moving bed of said catalyst, extracting from the lower portion of the reactor, continuously or discontinuously, a flow of catalyst comprising a carbonaceous deposit, transferring said catalyst to a regeneration zone where it undergoes at least one controlled oxidation step, then, downstream of the regeneration zone, re-introducing the catalyst comprising a reduced amount of carbonaceous deposit directly or indirectly into the upper portion of said reactor, the catalyst used being such that the zeolites from said group have a Si/Al ratio in the range 40 to 130.
2. A process according to claim 1, in which at least 80% by weight of the feed is derived directly from one or more hydrocarbon cracking units.
- 20 3. A process according to claim 1 or claim 2, in which at least 10% by weight of the feed is derived directly from one or more Fischer-Tropsch synthesis units.
4. A process according to one of claims 1 to 3, in which the zeolite or zeolites of said group belong to the sub-group constituted by zeolites of structure type MEL, MFI and CHA.
- 25 5. A process according to one of claims 1 to 4, in which the zeolite or zeolites of said group are of structure type MFI.
6. A process according to one of claims 1 to 5, in which the zeolite or zeolites of said group are constituted by ZSM-5 zeolite.
7. A process according to one of claims 1 to 6, in which the overall space velocity HSV is in the range 13 to 80 h<sup>-1</sup>.
- 30 8. A process according to one of claims 1 to 7, in which the overall space velocity is in the range 33 to 60 h<sup>-1</sup>.

9. A process according to one of claims 1 to 8, in which the residence time for the catalyst in the reaction zone is in the range 1 to 40 hours.
10. A process according to one of claims 1 to 9, in which the residence time for the catalyst in the reaction zone is in the range 2 to 18 hours.